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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte QING-HU LI and QIMING CHEN

Appeal 2015-008085
Application 12/988,368
Technology Center 2100

Before JASON V. MORGAN, JEREMY J. CURCURI, and NABEEL U. KHAN, *Administrative Patent Judges*.

KHAN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants[1] appeal under 35 U.S.C. § 134(a) from the Final Rejection of claims 1–15 and 21–25. Claims 16–20 are cancelled. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

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[1] Appellants identify Hewlett-Packard Development Company, LP, as the real party in interest. App. Br. 3.

STATEMENT OF THE CASE

The Invention

Appellants' invention relates to systems and methods for hierarchically dividing a geo image into a number of tiles and indexing the tiles such that those overlapping an arbitrary geographical bounding rectangle (GBR) may be retrieved efficiently for image provisioning. Spec. ¶ 20.

Exemplary independent claim 8 is reproduced below.

> 8. A method for provisioning a geographical image for retrieval, comprising:
>
> receiving a query for a requested geographical region in a geographical area of interest;
>
> subdividing the query into multiple subqueries in a same manner as a manner used to partition an index of a plurality of unique identifications (IDs) respectively assigned to a plurality of image tiles in a first database management scheme (DBMS) partitioning scheme, wherein the plurality of image tiles comprise subdivisions of a geographical area of coverage;
>
> providing the multiple subqueries to a plurality of processing nodes of a DBMS for parallel processing of the subqueries;
>
> parallel processing the multiple subqueries with the processing nodes of the DBMS to retrieve one or more of the plurality of image tiles that overlap or occupy the requested geographical region;
>
> assembling the retrieved one or more image tiles into a geographical image of the requested geographical region; and
>
> responding to the query with the geographical image.

References and Rejections

1. Claims 8–10, 12, 21, 22, 24, and 25 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Jetha (US 8,120,624 B2, Feb. 21, 2012), Von Glan (US 2005/0131893 A1, June 16, 2005), Singfield (US 2004/0215659 A1, Oct. 28, 2004) and Agarwal (US 6,223,182 B1, Apr. 24, 2001).

2. Claims 1–7 and 15 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Jetha, Von Glan, Singfield, Agarwal, and Srinivasan (US 6,920,460 B1, July 19, 2005).

3. Claims 11 and 23 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Jetha, Von Glan, Singfield, Agarwal, and Donath (US 7,072,764 B2, July 4, 2006).

4. Claims 13 and 14 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Jetha, Von Glan, Singfield, Agarwal, Srinivasan, and Lueck (US 7,796,837 B2, Sept. 14, 2010).

ANALYSIS

Claim 8 recites, in pertinent part, "subdividing the query into multiple subqueries in a same manner as a manner used to partition an index of a plurality of unique identifications (IDs) respectively assigned to a plurality of image tiles in a first database management scheme (DBMS) partitioning scheme." App. Br. 20. The Examiner finds this limitation is taught or suggested by the combination consisting at least of Von Glan and Agarwal. Final Act. 3–4. Specifically, the Examiner relies on Von Glan as teaching or suggesting subdividing a query into multiple subqueries in accordance with a first database management scheme (DBMS) partitioning scheme wherein

the subqueries are range-partitioned. Final Act. 3–4 (citing Von Glan ¶¶ 30–31, 41–42)). The Examiner relies on Agarwal as teaching or suggesting range partitioning of tables done within a database management partitioning scheme wherein a plurality of object tiles correspond to the partitioned table. Final Act. 4 (citing Agarwal 11:39–59).

Appellants argue "Von Glan fails to disclose 'subdividing the query into multiple subqueries in accordance with a first database management scheme (DBMS) partitioning scheme' as the Examiner alleges." App. Br. 9. According to Appellants "Von Glan states that the query 310 may be partitioned based upon information contained in a database table, e.g., a random number field" however, "Von Glan does not partition the query 310 based upon or in any relation to any scheme used to partition the database table." App. Br. 10. Appellants further argue "at best, Agarwal and Keighan discuss the partitioning of a table. However, the disclosure that a table may be partitioned in a particular manner is irrelevant as to whether a query is partitioned in a manner similar to a manner in which the table is partitioned." App. Br. 12.

We are unpersuaded by Appellants' arguments. We agree with both the Examiner's findings regarding Von Glan and Agarwal and the Examiner's ultimate conclusion of obviousness based on these findings. *See* Ans. 9–12; Final Act. 2–5. Von Glan teaches including a partitioning field populated with random numbers in a database table. Von Glan Abstract, ¶ 23. Von Glan further teaches that the random number partitioning field can be used to subdivide a query into parallel queries. Von Glan ¶¶ 23, 31, 41. We therefore agree with the Examiner that Von Glan teaches subdividing queries into multiple subqueries in accordance with a first

database management scheme (DBMS) partitioning scheme based on range partitioning of the database table.

Agarwal teaches that "a database object such as a relational database table or index is partitioned by subdividing the database object into several smaller independent subsets of the database object based on a 'partition key.'" Agarwal 1:21–25. Agarwal further teaches "[t]he partition key is then used to divide the table into one or more ranges of values." Agarwal 1:27–29. We therefore agree with the Examiner that Agarwal teaches partitioning an index of a database table done within a database management partitioning scheme based on range partitioning.

The combination of Von Glan and Agarwal, therefore, teaches that when queries are partitioned based on range partitioning of a partition field, as taught by Von Glan, and the index of a database table is also range partitioned on values of the same partition field, as taught by Agarwal, the combination would yield the predictable result of "subdividing the query into multiple subqueries in a same manner as a manner used to partition an index of a . . . database management scheme (DBMS) partitioning scheme," as recited in claim 8. In reaching our conclusion, we emphasize that a skilled artisan, with Von Glan's and Agarwal's teachings before him or her, would have selected the *same* partition field for range partitioning the query and for range partitioning the data "in order to better manage the requested data." Final Act. 5. We find this reasoning presented by the Examiner for selecting the same partition is rational. We therefore agree with the Examiner's ultimate conclusion of obviousness of claim 8.

Accordingly, we sustain the Examiner's rejection of claim 8. Appellants do not present any additional arguments for separate patentability

of the remaining pending claims, relying instead on the arguments made with respect to claim 8 (*see* App. Br. 7, 13–16). Therefore, we also sustain the Examiner's rejection of claims 1–7, 9–15, and 21–25.

DECISION

The Examiner's rejections of claims 1–15 and 21–25 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 41.50(f).

AFFIRMED